

Smart Plug User Manual

1. Features

Snowflake is a UL or ETL-listed, Smart Plug for the US and Canadian market.

Model:DS2002

- Loads:
 - Resistive 15A
 - Incandescent/Halogen 1000W
 - Motor ½ HP
- User Interface
 - Indicator LED
 - On/Off button



Figure 1 - Smart Plug Design

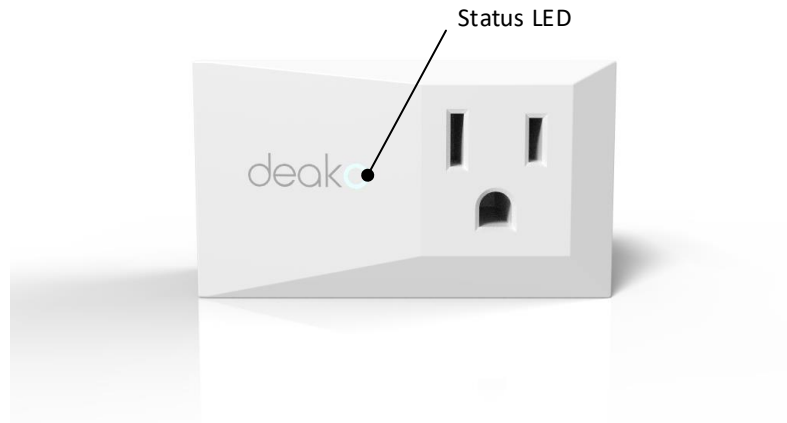


Figure 2 - Front View

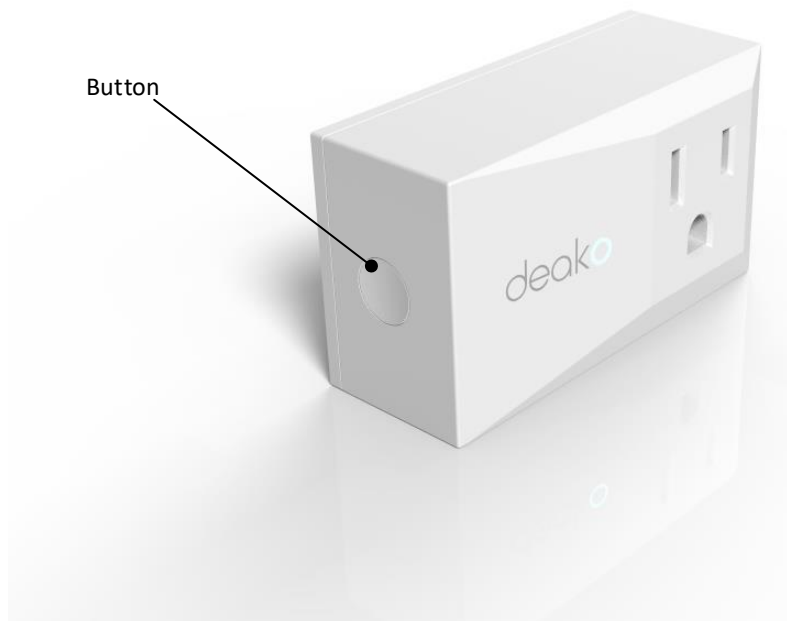


Figure 3 - Button View

2. Snowflake Electronic Interface Requirements

The electronics in Snowflake includes an AC/DC converter, the ESP32 Module, a relay and the user interface hardware (two buttons and one LED). The Supplier is responsible for all HW design and development and Deako is responsible for firmware development. A high-level block diagram is shown in Figure 4.

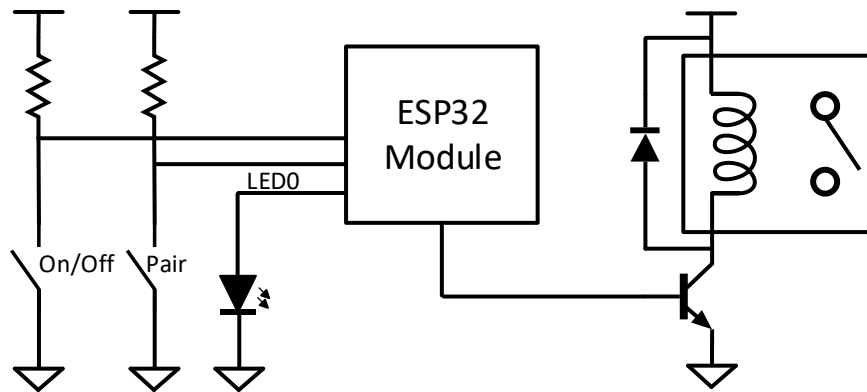


Figure 4 – Snowflake Electronics Block Diagram

The ESP32 WROOM32 Module will sit on a daughter card that interfaces to the main smart plug board. The daughter card will bring out at least 10 connections from the ESP32 WROOM32 Module to the smart plug PCB.

3. Snowflake Specifications

Deako expects the Supplier to create a test plan that demonstrates compliance to these specifications

Table 1 - Snowflake Specifications

#		Spec
3.1	Operating temperature	0°C - 40°C
3.2	UI surface temperature, max resistive load, max temperature after equilibrium	<50°C
3.3	Maximum Load – Incandescent/Halogen	1000W
3.4	Maximum Load – ELV/LED	Supplier to provide spec
3.5	Maximum Load – MLV	Supplier to provide spec
3.6	Load – Motor	½ HP
3.7	Load – General Purpose	Supplier to provide spec
3.8	Load – Resistive	15A
3.9	UL/ETL	Yes
3.10	UI	2 Buttons + 1 LED
3.11	Radio	Combo
3.12	Power Consumption with Load in Off State	500mW
3.13	Neutral Required	Yes

FCC Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

To assure continued compliance, any changes or modifications not expressly approved by the party.

Responsible for compliance could void the user's authority to operate this equipment. (Example- use only shielded interface cables when connecting to computer or peripheral devices).

This equipment complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference,
- (2) This device must accept any interference received, including interference that may cause undesired operation.

FCC Radiation Exposure Statement:

The equipment complies with FCC Radiation exposure limits set forth for uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

IC Statement

- English:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

- (1) This device may not cause interference, and
- (2) This device must accept any interference, including interference that may cause undesired operation of the device.

- French: L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

L'appareil numérique du CIEM conforme canadien peut - 3 (b) / nmb - 3 (b). Cet appareil est conforme à l'exemption des limites d'évaluation courante dans la section 2.5 du CNR - 102 et conformité avec RSS 102 de l'exposition aux RF, les utilisateurs peuvent obtenir des données canadiennes sur l'exposition aux champs RF et la conformité.

L'appareil a été évalué pour répondre aux exigences générales d'exposition aux radiofréquences. L'appareil peut être utilisé en condition d'exposition portable sans restriction.

This device complies with ISED RF radiation exposure limits set forth for an uncontrolled environment.

This device must be installed and operated with a minimum distance of 20 cm between the radiator and user body.

Le présent appareil doit être installé et exploité à une distance minimale de 20 cm entre le radiateur et les corps.